



## BACKGROUND OF THE INVENTION

The invention described herein has certain rights by the U.S. Government by NSF Grant No. CCR-9909026.

This application claims priority from provisional applications numbered 60/265,402 filed January 30, 2001 and 60/301,609 filed June 27, 2001.

### 1. FIELD OF THE INVENTION

The present invention relates to the implementation of lossless and near-lossless source coding for multiple access networks.

### 2. BACKGROUND ART

#### Source coding

Source coding, also known as data compression, treats the problem of efficiently representing information for data transmission or storage.

Data compression has a wide variety of applications. In the area of data transmission, compression is used to reduce the amount of data transferred between the sources and the destinations. The reduction in data transmitted decreases the time needed for transmission and increases the overall amount of data that can be sent. For example, fax machines and modems all use compression algorithms so that we can transmit data many times faster than otherwise possible. The Internet uses many compression schemes for fast transmission; the images and videos we download from some bulletin boards are usually in a compressed format.